SUCCESS OF PSEUDO-VERNACULAR ARCHITECTURE; CASE STUDY OF A RESIDENTIAL BUILDING

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Abstract

A visual survey of residential buildings in the rural and urban areas across Nigeria, reveal that the current trend in residential building typologies has no relationship with our culture or passive design strategies of our forebears, as can be seen in spatial configuration, form, materials, and construction methods. The authors through this project, sought first to employ a historical/cultural sense in the design of a residential building, involving an understanding, not only of the past, but the present, in a bid to re-focus the Nigerian Architects and the society at large on the urgent need to regain what seems to have been lost to westernization. Hence, the Project employed the pseudo-vernacular concept which establishes continuity with the past and also helps regain the building culture and features of our forebears that worked for centuries in the social, cultural and economic terms beyond the short term. In the conveyance of an illusion of harmony, pseudo-vernacular succeeds in incorporating a set of thoroughly discordant and disconnected social beliefs in our building culture. This resulted in creating adaptable buildings with great saving in cost of energy through use of the acknowledged passive design strategies, local building materials/technology and culture of our forebears. As well, the building was widely accepted by the client, observers and further commissions in the same regard.

Keywords: *Pseudo-vernacular Architecture, Culture, Materials Adaptation and environmental sustainability*

1.0.0 Background of the Project.

World over the familiarity with the architectural achievements of one's country, an understanding and appreciation of its traditions and development through the ages, is an accepted means towards formation of national consciousness and self assertion. Because every race has a way of doing their things, architectural practices which evolved through experiences grounded by trail and sometimes by error towards solving their own architectural needs within their own climate and building materials available (Dmochowski, 1972).

Moss et. al (1984) asserted that Stories, Films and journalism are usual vehicles for myths, but architectural style can perform the same function. Through its power to create a scenery referring to ways of life that are believed to be harmonious and stable, architecture has often been used to give an appearance of order that conceals the conflicts at large within the environment. Elliot (1984) on his part contend that poetry like architecture has the kind of value that perishes when translated into a foreign language. Perhaps here is one more reason to believe that our indigenous architecture cannot be completely copied from foreign patterns because of the many conflicts abound presently. Uzuegbunam (2012) in his reflections of Nigerian Architecture concluded that this architecture may have lost its essence of being because it has no correlation with the culture of its people. Supporting this, Sabine (2004) opined that indigenous knowledge and even igbo

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language proficiency are declining so as its religious practice and its architecture.
Hence, the strong need for architectural practitioners in the country to have a re-think of an adaptable concept that would bring about a change to be their own continuation of the work done by their forbears. Many Scholars have contended that the success of pseudo-vernacular concept has been helpful in bridging the linking between different values held by a society (Moss et.al, 1980; Elliot, (1984).

1.1.0 Objectives of the study

The Study sought to adopt the pseudo-vernacular concept in the design of a residential building in Enugu, Nigeria in a bid to, amongst other things:

- Promotion of sustainability tenets through application of Climate responsive Architectural practices
- Sustenance of Culture and tradition through adoption of appropriate spatial linkages and architectural forms.
- Enhance continuity and sustainability in design and construction practices
- Ensure coordinated appearance, harmony and order in designs that conceals conflicts within an environment through the use of pseudo-vernacular architecture.

2.0.0 The Brief:

The brief was to design a residential building for a Nigerian of Igbo origin with multiple households. The conceptual arrangement of spaces, form and choice of materials is to reflect the culture of the Ibo people as well as being able to withstand the climatologically setting.

3.0.0 The Site:

Nigeria lies between the square boundaries of latitudes N4.00° to N13.00° north of the Equator and longitude E3.00° to E14.00° east of the Greenwich meridian It shares boundary on the west with the Republic of Benin and on the east with the Republic of Cameroon. At the north-eastern boundary is Chad Republic while the Gulf of Guinea of the Atlantic Ocean close it up at the southern coast lines. Plot 223 old G.R.A, Enugu lies at latitude 6.461° and longitude 7.494° in the hot humid tropical environment of south eastern Nigeria. The almost rectangular site has a fairly gentle slope from the front access road to the back; this will still be kept, for ease of drainage without hindrance. The design of the project was to follow the dictates of the site. The soil type is clayey and of poor load bearing capacity (see fig. 1.0; for location map and fig. 1.1 Map of Enugu, highlighting the site location)



Fig.1.0:Map of Nigeria, highlighting Enugu

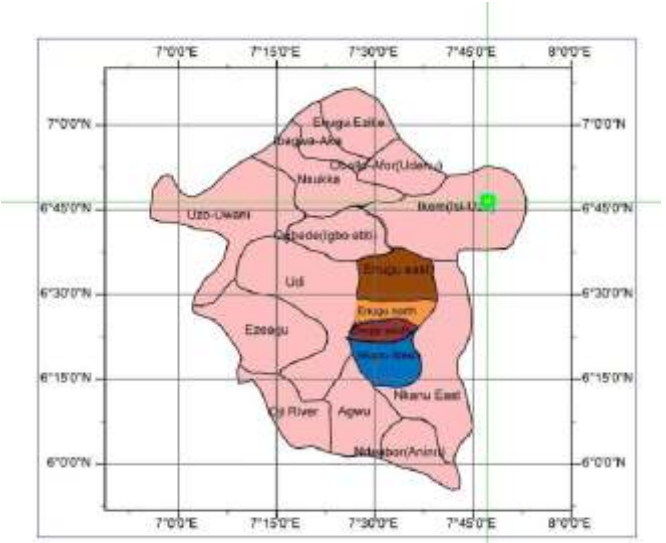


Fig.1.1: Map of Enugu, highlighting the site location

4.0.0 The Concept:

Pseudo-vernacular concept is the use of traditional features on buildings which are in all other respects wholly modern. The main characteristic of all pseudo-vernacular building is to combine references to the past and to the future in an obvious and unself-conscious way. Moss et.al, (1980) asserted that pseudo-vernacular design, beneath a superficially dominant impression of unity, are found assembled a bizarre range of incongruous motifs which serve to represent the far from compatible reactions people have towards their environment. Thus conveying an illusion of harmony, pseudo-vernacular succeeds incorporating a set of thoroughly discordant and disconnected social beliefs. (See fig 2; for the model of the building)



Fig. 2: Model of the building

The effectiveness of pseudo-vernacular design suggests continuity with the past and so provides a metaphorical image of a static society for people whose actions and desires deny that their society is static, but who nevertheless need to believe that it is for their actions to seem worthwhile. The approach adopted by this work was driven by the synergy of local building researches/demand that fulfills the agreed objectives of vernacular tenets of the people of the south east Nigeria.

In some way, the bioclimatic/ pseudo-cultural approach seems to fall nicely between the local rhetoric of traditional heritage and the politically correct jargon of globalization. On the one hand, the preference to traditional environmental and social practices of ancient Ibo architecture concerns about their heritage being endangered by westernization. Faced with this concern, Anako, (2002) asserted that architecture has been found to be one of the most suitable means of creating an ideal environment which depends on the goals, ideals and values of a people.

5.0.0 The Plan:

Culture has a great influence on the appearance of vernacular building. The way shelters are used is of great influence on the building form. The size of family, how many wives and their children, who shares which spaces, how food is prepared and eaten, how people interact and many other cultural considerations informed the spaces, size of the dwelling and grade of privacy; zone of privacy and semi-public zone at the ground floor. A condition which necessitated the partitioning of dwelling spaces for the different wives and their children referred to as “mkpuke”. The family interaction and meeting is encouraged at the family lounge.

The master's bedroom was strategically located to observe the entrance gate and the internal activities. For their spiritual update a prayer room was kept at the pent house (see fig. 5; for Plan of Penthouse) to enable the family interacts with their God, to which Aniakor (2002) considered as very important for their spiritual well being. Fig. 4a. 4b and 4c clearly show how this zone of privacy was intimately linked with the semi-public zone at the main and private lounges at the ground floor plan referred to as the “Obi” (this time around for everyone and for selected meeting area respectively). The kitchen together with its store and the Dining are strategically located to serve this multi-household family and their visitors. An entrance provides a fluid passage which links the exterior and interior space. To this, Anako (2002) opined that all house structures are spatial entities whose disposition and placement are based on certain principles of space organization and relationship which reflect the ideals of that society.

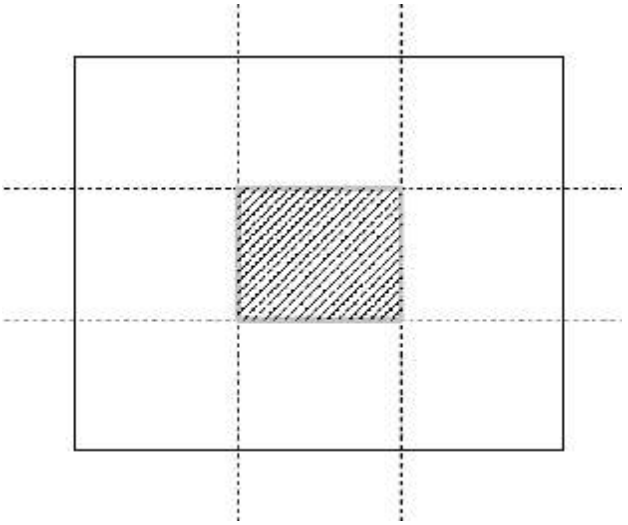


Fig. 3:Illustrating the Golden Rectangle Concept



Fig. 4a: Ground Floor Plan



Fig. 4b: First Floor Plan

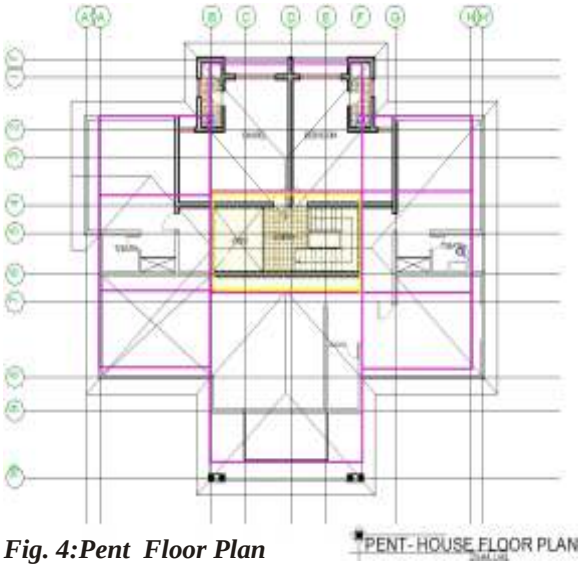


Fig. 4:Pent Floor Plan

Through history architects have restored as readily to the circle as to the square for a geometric framework on which to design. This led Unwin,(2009) to conclude that both structure and space are media of architecture. Further on, he proposed that one can either choose or allow a structural strategy to define the places one wishes to create, or one can decide on places and force the physical structure of a building to cope with them. The plan of the mansion is based on square geometric figure; **the Golden Rectangle** - to help in planning for the spaces; activities, size and the culture of the inhabitants. Many Scholars have posited that the Golden Rectangle is one that has a particular proportional relationship between its two dimensions: the ratio of the short dimension to the long is equal to that between the long dimension and the sum of the two dimensions (Unwin (2009); Le Corbusier, (1927).

This implies that if a space representing a square is subtracted from the form, one is left with another, the smaller Golden Rectangle (see fig. 3). The square near the middle of the plan accommodates the stair hall that connects the floors and vertical access to other various individual private and communal spaces.

The central square is an access for upper floors (private area) as well as for stack effect ventilation effects because according Rajapaska, (2004) as cited by Uzuegbunam, (2011) there is strong need to find a design strategy for optimum wind force ventilation on a hot still day, to which he considered as crucial. Hence an appropriate measure was applied after a examination of relevant information and data identification.

6.0.0 Substructure:

The results of mechanical analysis and liquid/plastic limits tests carried out on the disturbed soil samples showed that the soils

contained not less than 35.2% of silt and clayey materials, Pad foundation of footing not less than 1.2mx1.2m was introduced at regular intervals to localize stresses and check adverse movement. As well, water proof membrane was provided in the foundation to check seasonal rising underground water.

7.0.0 Windows and Doors:

Doors in Igbo culture perform two main functions of barring the entrance to the compound or to the house, and works of decorative art. Sequent to this, hard wooden crafted doors were extensively in most public/ semi-public spaces of building- this reflects the adaptation of an ancient craft of the Igbo people. Windows were Aluminum/glass casement windows were purposefully located in every given space, this is for maximum ventilation process to take place because of the low speed with associated with the hot-humid climate of Nigeria (Komolafe,1988).

8.0.0 Walls, Roof, Ceiling and floor

Passive architecture to which Traditional houses belong is a climate responsive building that provides comfortable indoor conditions, without relying on mechanical means. Hence, Earthy low thermal mass envelope: Bricks and raised roof of "emceil" concrete roofing material (see fig. 5; for Section) with deep eaves were employed to facilitate ventilation and cooling of the building structure. All these are in accordance with the views of Olgyay, (1963); Dmochowski, (1972).

Studies have shown that most of the structures in the ancient Igbo settlements were of earthen materials (Dmochowski, 1972). Ahianba, (2013) asserted that low social status has been attached to mud and its use. This position made it imperative to source and use earthen brick walls in order to come closer to the wall material our forebears were known for their thermal comfort and energy conservation as well as to strengthen and preserve existing knowledge/skills with respect to local building techniques (see fig.2; Model of the building). A position which attested to the significance of a pseudo vernacular development (Moss et.al ,1980).

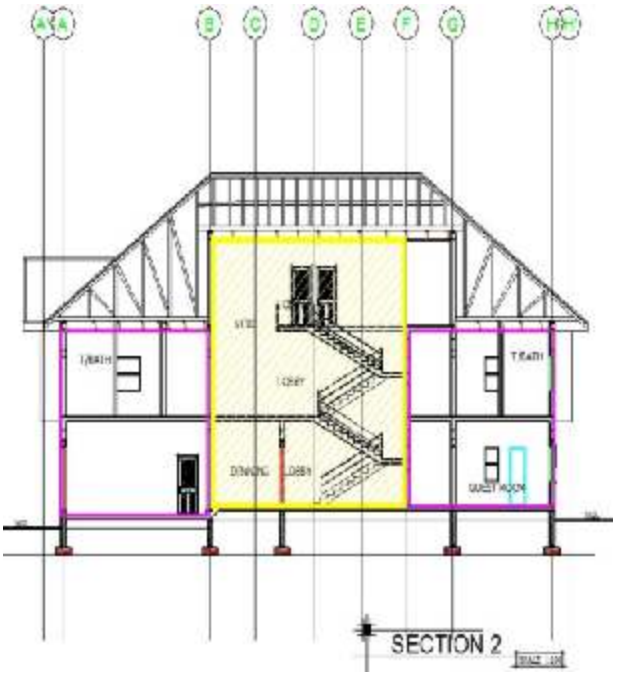


Fig.5:Typical section showing roof overhang

In our then traditional societies, their roof though made of thatch and wood were usually high hipped to allow for easy runoff of water, had hair cracks which aided ventilation; thus the engagement of high-pitched hardwood roof structure and choice of "Emenite" concrete roof interlocking tiles and their ceiling sheets which possess high qualities in strength, sound absorption and thermal properties thus reduction of energy

consumption to be sustainable (http: www.emenite.com/concrete.roofing.php). Floor of major public spaces were finished with high quality light brown marble as a look like of traditional earthen mud floor to fit.

9.0.0 Conclusion:

The need for an excellent delivery of a challenging pseudo-vernacular residential building and setting, combining sensitivity and pragmatism to the best effect, was reasonably achieved in this architectural strategy. The real assessment of this strategy must, however, be made on architectural grounds, in addition to the technical accomplishments. The twenty first century's modernist architecture resulted in widespread environmental failure in the area under discourse. In these designs there is encouraging evidence that a new synthesis of tradition and technology is possible. In their quiet, undemonstrative ways they both seek a relationship between the past and the present. The result is buildings which should be agreeable to live in, with building materials well sourced to reflect the passive architecture and culture of our forebears to which experts attested to its great success.

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